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22850	7590	08/05/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
GILLESPIE, BENJAMIN				
ART UNIT		PAPER NUMBER		
1796				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

**Application No.**

10/526,017

**Applicant(s)**

WAGNER ET AL

**Examiner**

BENJAMIN J. GILLESPIE

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 4-19 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim recites the limitation “the allophanate fraction being 5 to 65 mol%,” however this limitation lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 3-5, 7-8, 14-15, 17, 19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuroda et al (EP 0,965,604). Kuroda et al teach a coating composition comprising a polyurethane that is the reaction product of (A) polyisocyanate, (B) hydroxylalkyl(meth)acrylate, (C) and N-hydroxylalkyl-oxazolidine, wherein (A) is a NCO-terminated prepolymer produced by reaction (Ai) diisocyanate with (Aii) low molecular weight diol and/or triol (Paragraphs 2, 6, 7, and 10). In particular, (Aii) consists of compounds such as ethylene, propylene, and neopentyl glycol, as well as 1,1,1-tris(hydroxymethyl)propane, which is chemically synonymous with trimethylolpropane (Paragraph 8). Regarding the claimed polyurethane backbone architecture of claim 8, although it is not explicitly disclosed by patentees, it would inherently be shared since Kuroda et al teach identical reactants present in

corresponding amounts; (B) and (C) are present relative to (A) in an NCO:OH ratio of 2:1 (Paragraphs 9, 11, and 17). Finally, regarding the limitations of claims 14 and 15, paragraph 51 and 53 teach wooden and metallic substrates, and based on the presence of the acrylate groups, the polyurethane would inherently be radiation curable.

3. Claims 3-5, 7, 14-15, 17, 19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Paar et al ('702). Paar et al teach a coating composition comprising a polyurethane that is the reaction (A) polyisocyanate, (B) hydroxylalkyl(meth)acrylate, (C) and N-hydroxylalkyl-oxazolidine, wherein (A) is a NCO-terminated prepolymer produced by reaction (Ai) diisocyanate with (Aii) low molecular weight diol and/or triol (Paragraphs 2, 6, 7, and 10). Furthermore, based on the presence of acrylate functional groups, the polyurethane would inherently be radiation curable.

4. Claims 3-5, 7-10, 14-15, 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Leitner et al ('655). Leitner et al teach a coating composition comprising a polyurethane that is the reaction (A) polyisocyanate, (B) hydroxylalkyl(meth)acrylate, (C) and N-hydroxylalkyl-oxazolidine (Abstract; col 1 lines 60-68; col 3 lines 3-11). Patentees go on to explain that the binder may be rendered water-dispersible by neutralizing basic groups in the polymer backbone with acid (Col 3 lines 38-64). Although not explicitly disclosed, the claimed backbone architecture of claim 8 would inherently be shared with the polyurethane of Leitner et al based on identical reactants and corresponding stoichiometry. Furthermore, based on the presence of acrylate functional groups, the polyurethane would inherently be radiation curable.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (EP 0,965,604) in view of Bruchmann et al ('569). Aforementioned, Kuroda et al teach a polyurethane coating comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine, however patentees fail to disclose the other amino-capped groups listed in claim 6. Bruchmann et al also teach a polyurethane coating comprising polyisocyanate and isocyanate-reactive amino-capped compounds, such as hydroxyl-functional oxazolidines, aldimines and ketimines (Col 1 lines 5-11, 47-50, col 2 lines 53-67, col 3 lines 10-15, col 4 lines 23-28; col 6 lines 63-67, col 7 lines 28-35).

7. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to include aldimine and ketimine groups in Kuroda et al, based on the teachings of Bruchmann et al that establish they are suitable equivalents for oxazolidines and the mere

substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. In re Ruff 118 USPQ 343 (CCPA 1958).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paar et al ('702) in view of Bruchmann et al ('569). As previously discussed, Paar et al teach a polyurethane coating comprising N-Hydroxylalkyl-oxazolidine, however patentees fail to disclose the other amino-capped groups listed in claim 6. Bruchmann et al also teach a polyurethane coating comprising polyisocyanate and isocyanate-reactive amino-capped compounds, such as hydroxyl-functional oxazolidines, aldimines and ketimines (Col 1 lines 5-11, 47-50, col 2 lines 53-67, col 3 lines 10-15, col 4 lines 23-28; col 6 lines 63-67, col 7 lines 28-35).

9. It would have been obvious to one of ordinary skill in the art at the time of invention to include aldimine and ketimine groups in Paar et al, since it has been established by Bruchmann et al they are suitable equivalents for oxazolidines and the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. In re Ruff 118 USPQ 343 (CCPA 1958).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leitner et al ('655) in view of Bruchmann et al ('569). Aforementioned, Leitner et al teach a polyurethane coating comprising N-Hydroxylalkyl-oxazolidine, however patentees fail to disclose the other amino-capped groups listed in claim 6. Bruchmann et al also teach a polyurethane coating comprising polyisocyanate and isocyanate-reactive amino-capped compounds, such as hydroxyl-functional

oxazolidines, aldimines and ketimines (Col 1 lines 5-11, 47-50, col 2 lines 53-67, col 3 lines 10-15, col 4 lines 23-28; col 6 lines 63-67, col 7 lines 28-35).

11. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include aldimine and ketimine groups in Leitner et al, based on the teachings of Bruchmann et al that establish they are suitable equivalents for oxazolidines and the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. In re Ruff 118 USPQ 343 (CCPA 1958).

12. Claims 9-13 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (EP 0,965,604) in view of Bradford et al (US 2003/0083397). As previously discussed, Kuroda et al teach a radiation-curable coating composition comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine, however patentees fail to teach the methodology of claims 11-13, a dispersion comprising said composition, or additional components corresponding to claim 17.

13. Bradford et al also teach a radiation-curable, water-dispersible coating composition comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine in the presence of photo/thermal initiators and anionic emulsifiers. Furthermore, said coating composition is applied to an automotive part, then exposed to radiation in an inert environment, and heated to a temperature between 120°F and 350°F (Paragraphs 23, 33, 38, 69, 94, 96, 98, 109, 119, and 124). This dual cure method results in coating compositions that has enhanced surface properties without substantial emissions during curing, and the presence of emulsifiers eliminates the need for organic solvent (Paragraph 21 and 99).

14. Therefore, it would have been obvious to include the initiators and dual cure methodology of Bradford et al in Kuroda et al since it is disclosed as being useful in producing superior final coatings that have decreased emissions during curing. Similarly, it would have been obvious to include the anionic emulsifiers in Kuroda et al since it would render the polyurethane water-dispersible and eliminate the need for organic solvent which is harmful to the user and environment. It also would have been obvious to apply the coating of Kuroda et al on an automotive part since Bradford et al teach such applications are suitable for similar compositions, and the prima facie case of obviousness rises from the expectation that compounds similar in structure will have similar properties. *In re Gyurik*, 596 F.2d 1012, 201 USPQ 552 (CCPA 1979).

15. Claim 9-13 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paar et al ('702) in view of Bradford et al (US 2003/0083397). As previously discussed, Paar et al teach a radiation-curable coating composition comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine, however patentees fail to teach the methodology of claims 11-13, a dispersion comprising said composition, or additional components corresponding to claim 17.

16. As previously discussed Bradford et al also teach a radiation-curable coating composition comprising thermal/photo based initiators and anionic emulsifiers, wherein said composition is applied to an automotive part, exposed to radiation in an inert environment, and heated to a temperature between 120°F and 350°F (Paragraphs 23, 33, 38, 69, 94, 96, 109, 119, and 124). Bradford et al go on to explain that this dual cure method results in coating compositions that have enhanced surface properties without substantial emissions during curing (Paragraph 21).



17. Therefore, it would have been obvious to include the initiators and dual cure methodology of Bradford et al in Paar et al since it is disclosed as being useful in producing superior final coatings that have decreased emissions during curing. Similarly, it would have been obvious to include the anionic emulsifiers in Paar et al since it would render the polyurethane water-dispersible and eliminate the need for organic solvent which is harmful to the user and environment. It also would have been obvious to apply the coating of Paar et al on an automotive part since Bradford et al teach such applications are suitable for similar compositions, and the prima facie case of obviousness rises from the expectation that compounds similar in structure will have similar properties. *In re Gyurik*, 596 F.2d 1012, 201 USPQ 552 (CCPA 1979).

18. Claims 9-13 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leitner et al ('655) in view of Bradford et al (US 2003/0083397). As previously discussed, Leitner et al teach a radiation-curable coating composition comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine, however patentees fail to teach the methodology of claims 11-13, a dispersion comprising said composition, or additional components corresponding to claim 17.

19. Bradford et al also teach a radiation-curable coating composition comprising thermal/photo based initiators and anionic emulsifiers, wherein said composition is applied to an automotive part, exposed to radiation in an inert environment, and heated to a temperature between 120°F and 350°F (Paragraphs 23, 33, 38, 69, 94, 96, 109, 119, and 124). Bradford et al go on to explain that this dual cure method results in coating compositions that have enhanced surface properties without substantial emissions during curing (Paragraph 21).

20. Therefore, it would have been obvious to include the initiators and dual cure methodology of Bradford et al in Leitner et al since it is disclosed as being useful in producing superior final coatings that have decreased emissions during curing. Similarly, it would have been obvious to include the anionic emulsifiers in Leitner et al since it would render the polyurethane water-dispersible and eliminate the need for organic solvent which is harmful to the user and environment. It also would have been obvious to apply the coating of Leitner et al on an automotive part since Bradford et al teach such applications are suitable for similar compositions, and the prima facie case of obviousness rises from the expectation that compounds similar in structure will have similar properties. *In re Gyurik*, 596 F.2d 1012, 201 USPQ 552 (CCPA 1979).

21. Claims 9-10, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (EP 0,965,604) in view of Leitner et al ('655). As previously discussed, Kuroda et al teach a coating composition comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine, however patentees fail to teach an additional reactant consisting of an isocyanate-reactive compound that has one actively dispersing group.

22. Aforementioned, Leitner et al also teach coating compositions comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine. Furthermore, patentees explain that said composition may also contain groups, which upon being neutralized with acid compounds, render the polyurethane water-dispersible thereby eliminating the need for harmful organic solvent. Therefore, it would have been obvious to also include the water-dispersing groups of Leitner et al in Kuroda et al since both teach

analogous compositions, and the additional component of Leitner et al provides a coating that has decreased toxicity.

23. Claims 9-10, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paar et al ('702) in view of Leitner ('655). As previously discussed, Paar et al teach a coating composition comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine, however patentees fail to teach an additional reactant consisting of an isocyanate-reactive compound that has one actively dispersing group.

24. Aforementioned, Leitner et al also teach coating compositions comprising the reaction product of (A) polyisocyanate, (B) hydroxylalkyl (meth)acrylate, (C) N-Hydroxylalkyl-oxazolidine. Furthermore, patentees explain that said composition may also contain groups, which upon being neutralized with acid compounds, render the polyurethane water-dispersible thereby eliminating the need for harmful organic solvent. Therefore, it would have been obvious to also include the water-dispersing groups of Leitner et al in Paar et al since both teach analogous compositions, and the additional component of Leitner et al provides a coating that has decreased toxicity.

#### ***Response to Arguments***

25. Applicant's arguments, filed 4/17/2008, with respect to the rejection of:
- a. Claims 3-22 as being anticipated by Bradford et al (US 2003/0083397),
  - b. Claims 1-18 as being unpatentable over Bradford et al in view Arora et al ('154), and
  - c. Claim 6 as being unpatentable over Bradford et al in view of Bruchmann et al ('569),

26. Have been fully considered and are persuasive. The rejection has been withdrawn, however a new rejection has been applied in view of the newly discovered references Kuroda et al, Paar et al, and Leitner et al.

***Conclusion***

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/  
Primary Examiner, Art Unit 1796

B. Gillespie